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07/15/2005 11:00 AM

To Derrick Golden/R1/USEPA/US@EPA,
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Subject Revised draft PowerPoint for Public Information
Meeting-attached

History:  This message has been replied to and forwarded.

Attached is the revised draft. The figure on Slide 31 is still being revised and will be sent separately on Monday for your review. Please provide any comments regarding this version by COB today so that I can review over the weekend. We have a tight schedule with the printer to get handouts printed for the Tuesday meeting.

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July15DraftPublicMeeting.ppt

Public Information Meeting EPA's Proposed Cleanup Plan

W. R. Grace (Acton Plant) Superfund Site
Operable Unit 3 (OU-3)

Acton, MA

July 19, 2005

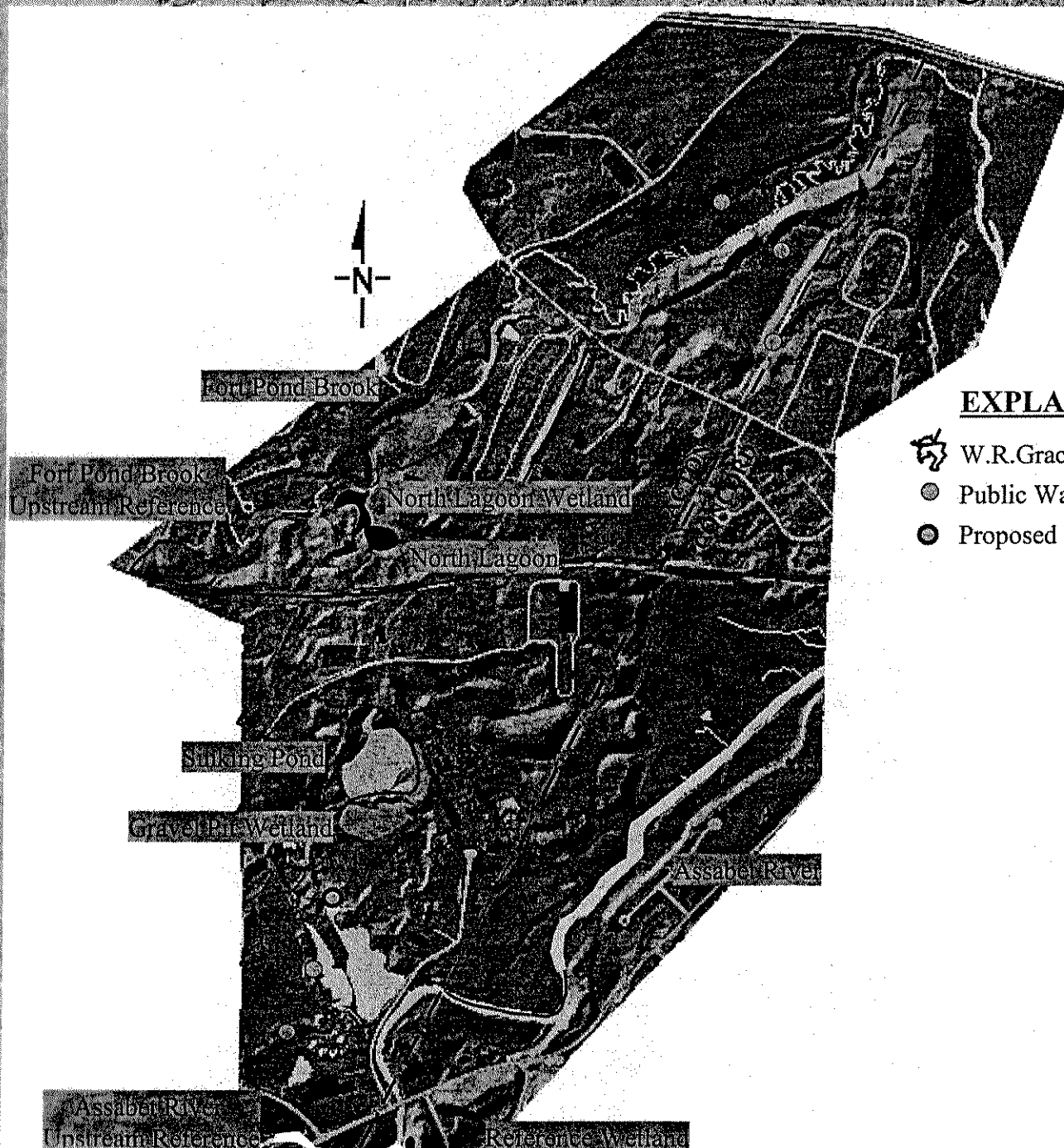
Draft July 15, 2005 11:30 AM

Agenda




- Welcome and Introductions
 - Angela Bonatigo, USEPA
- Site Status and EPA's Proposed Plan
 - Derrick Golden, USEPA
- Remedial Investigation and Risk Assessments
 - Derrick Golden, USEPA
- Feasibility Study Overview
 - Derrick Golden, USEPA
- Feasibility Study Evaluation
 - Jack Guswa, Geotrans
- EPA's Proposed Plan
 - Derrick Golden, USEPA
- Questions & Answers

This is a detailed topographic map of the West Concord, Massachusetts area. A large, irregularly shaped area is outlined in black, representing a specific region of interest. The map features contour lines indicating elevation, with peaks reaching up to 400 feet. Several roads are shown, including Route 2, Route 2A, and Route 106, which are highlighted with thicker lines. Key landmarks and locations labeled on the map include South Acton, West Concord, Maynard, Warner's Pond, and various schools and churches. Four callout boxes are present: 'Rt. 2' at the top right, 'Rt. 2A' on the left, 'Rt. 106' at the bottom right, and an unlabeled box near the center. The map also shows 'Gravel Pit', 'Sewage Disposal', and 'Water' features.

W. R. Grace Superfund Site and Surrounding Areas



EXPLANATION

-  W.R. Grace Property Boundary
-  Public Water Supply Well
-  Proposed Public Water Supply Well

Cleanup Progress at the W.R. Grace Site

- **Aquifer Restoration System (ARS)**

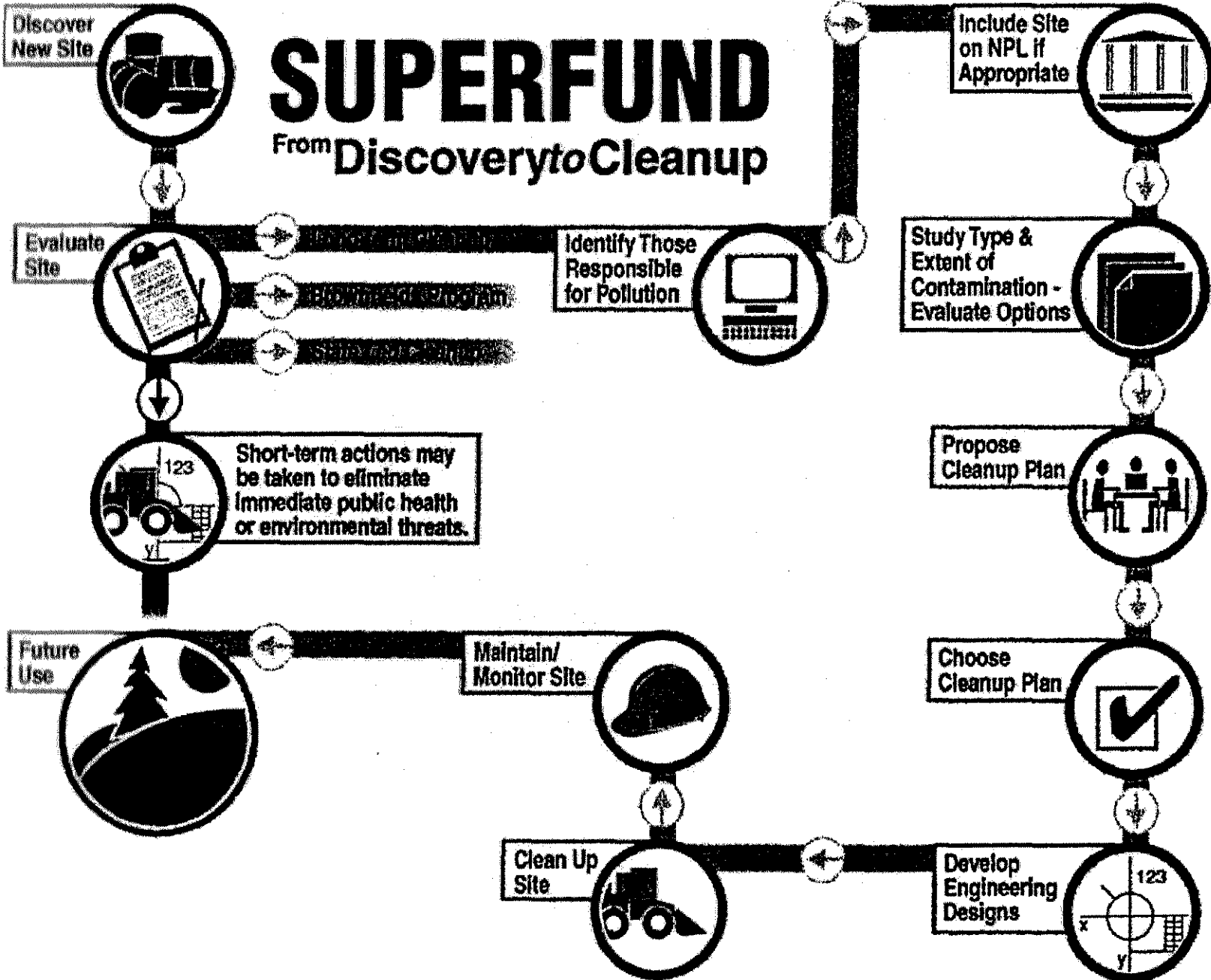
Since the ARS began operation in 1984, more than 4.1 billion gallons of water have been treated, removing over 6,100 pounds of total VOCs from groundwater.

- **1989 Record of Decision for soil and sludge**

Between 1994 and 1997, more than 173,000 cubic yards of contaminated soil and sludge were excavated and capped on-site.

- **Over 20 years of groundwater monitoring data has been collected, evaluated, and incorporated into the Remedial Investigation and groundwater flow model**

- **Ongoing treatment by the Acton Water District provides the Town of Acton with water that meets the Safe Drinking Water Act standards**



EPA's Proposed Cleanup Plan: Sinking Pond

- Cleanup of approximately 6,800 tons of contaminated soils and sediment to address unacceptable risks
- Redesigning of pond inlet to reduce flow, turbidity and erosion
- Planting of wetland vegetation along the pond bank to prevent erosion
- Institutional controls, long-term maintenance and monitoring
- Estimated cost: \$6 million

EPA's Proposed Cleanup Plan: North Lagoon Wetland

- Cleanup of approximately 2,400 tons of contaminated soils and sediments to address unacceptable risks
- Wetland restoration, replacement and enlargement, as necessary
- Institutional controls, long-term maintenance and monitoring
- Estimated Cost: \$3.4 million

EPA's Proposed Cleanup Plan: Groundwater

- Construction of an approximately 200 gallon per minute on-site groundwater treatment plant; treatment components include:
 - air stripping
 - carbon adsorption
 - metals precipitation
 - discharge to Sinking Pond
- Extraction and treatment of groundwater in the southeast and southwest landfill areas

EPA's Proposed Cleanup Plan: Groundwater, cont'd.

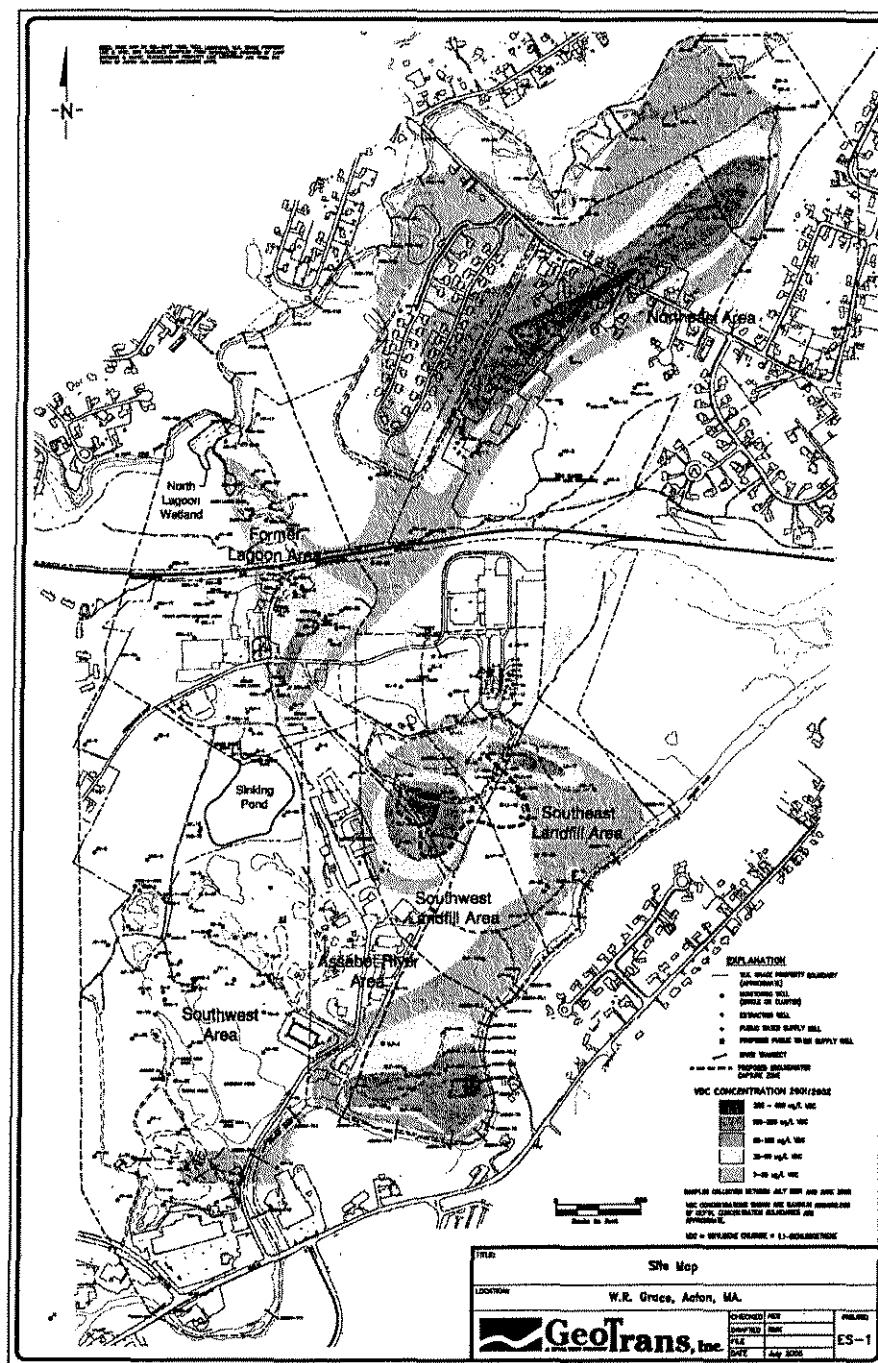
- Enhanced flushing/natural attenuation of plume areas not captured by the extraction system
- Institutional Controls (access restrictions, groundwater use restrictions)
- Long-term monitoring of all contaminated groundwater
- Estimated Cost: \$7.6 million

What is the Remedial Investigation and Risk Assessment?

- Identifies the type and extent of contamination on the site
- Identifies sensitive populations that may be affected by contamination on the site by preparation of
 - Public Health Risk Assessment
 - Baseline Ecological Risk Assessment

Remedial Investigation Highlights

- The primary contaminants in groundwater are: vinylidene chloride (VDC), vinyl chloride, benzene, arsenic and manganese
- The primary contaminants in sediment are: arsenic and manganese



Public Health Risk Assessment

Conclusions

- Groundwater Exposure
 - There is a potential future risk to people who drink or use untreated contaminated groundwater due to the presence of VOCs, arsenic and manganese in the groundwater

Public Health Risk Assessment

Conclusions

- Sediment Exposure
 - There is a unacceptable potential future risk to people who come into contact with arsenic-contaminated sediment while wading or swimming in Sinking Pond or the North Lagoon Wetland

Baseline Ecological Risk Assessment Conclusions

- Unacceptable risks were identified for benthic invertebrates and semi-aquatic wildlife due to surface water and sediment contamination in the North Lagoon Wetland and Sinking Pond

Feasibility Study - Introduction

- Identifies and evaluates potential remedial technologies
- Addresses areas of unacceptable risk identified in the Remedial Investigation and Risk Assessments
- Identifies, screens, and compares remedial options
- Used by EPA to prepare the Proposed Cleanup Plan

Feasibility Study - Process

- Identifies relevant federal and state regulations (“ARARS”)
- Determines site-specific cleanup goals
- Identifies potential remediation technologies
- Screens appropriate technologies
- Assembles applicable cleanup technologies or various combinations of cleanup technologies
- Conducts a detailed evaluation of cleanup technologies
 - Compares to EPA’s nine criteria
 - Compares alternatives to one another

Nine Criteria for Remedy Selection

- Threshold Criteria:
 - Overall Protection of Human Health and the Environment (“Protectiveness”)
 - Compliance with ARARs
- Balancing Criteria
 - Long-term Effectiveness and Permanence
 - Reduction in Toxicity, Mobility, and Volume
 - Short-term Effectiveness
 - Implementability
 - Cost

Nine Criteria For Remedy Selection

- Modifying Criteria:
 - State Acceptance
 - Community Acceptance
- These are evaluated based on the public comment period

ES Evaluation

Various cleanup alternatives were reviewed to reduce unacceptable risks from contaminated groundwater, and from contaminated sediment in North Lagoon Wetlands and Sinking Pond

FS Evaluation - Sinking Pond Sediment

- Two remedial alternatives were carried through a detailed analysis:
 - SP-SED-1 No Action (a Superfund requirement)
 - SP-SED-3 Active Remediation involving sediment excavation as well as covering/capping in selected portions of the pond

FS Evaluation - North Lagoon Wetland Sediment

- Two remedial alternatives were carried through a detailed analysis:
 - NLW-SED-1 No Action (a Superfund requirement)
 - NLW-SED-3 Active Remediation including excavation and covering/capping with wetland restoration

FS Evaluation - Groundwater

- Three comprehensive clean-up alternatives were carried through a detailed analysis:
 - GW-1 No Action (a Superfund requirement)
 - GW-2 Limited Action (natural attenuation processes with institutional controls)
 - GW-3 Active Remediation (groundwater extraction/treatment from a reconfigured ARS along with Monitored Natural Attenuation and institutional controls)

Groundwater Plume Areas

- Several Alternative Extraction/Injection Pumping Scenarios were evaluated in detail for all areas of the Site that have contaminated groundwater
- To simplify the evaluation, the Site was divided into six geographic areas:
 - Northeast Area
 - Former Lagoon Area
 - Assabet River Area
 - Southwest Landfill Area
 - Southeast Landfill Area
 - Southwest Area

FS Evaluations

- Each scenario considered the following factors:
 - Timeframe to reach MCLs for VOCs
 - Community impacts
 - Potential impacts to private property
 - Potential impacts to Fort Pond Brook
 - Adverse impacts to Town wells
 - Implementability
 - Total VOC mass to be removed
 - Rate of VOC mass removal
 - Ability of VOC plume to mobilize inorganics
 - Cost

Active Technologies Evaluated

- In-Situ Chemical Oxidation
- In-Situ Bio-augmentation
- Groundwater Extraction with Ex-situ Treatment and Surface Water Discharge
- Groundwater Extraction with Ex-situ Treatment and Groundwater Re-injection

Active Technology Screening

- In-situ methods were eliminated based on implementability issues, such as the number of wells that would be required to inject treatment chemicals into the aquifer

FS Evaluation

MODEL-CALCULATED TIME FRAMES TO REACH MCLS FOR VDC AND/OR BENZENE FOR VARIOUS PUMPING SCENARIOS	
FORMER LAGOON AREA	TIME, YEARS
Monitored Natural Attenuation Only	13
Zone A, B Capture	12, 12
ASSABET RIVER AREA	
Monitored Natural Attenuation Only	17
Zone B Capture	17
SOUTHWEST LANDFILL AREA	
Monitored Natural Attenuation Only	42
Zone F, G Capture	22, 33
SOUTHEAST LANDFILL AREA	
Monitored Natural Attenuation Only	23
Zone H, I Capture	22, 23
NORTHEAST AREA	
Monitored Natural Attenuation Only	25
Zone C and Zone D Capture, Extraction Only	20, 36
Zone C and Zone J Capture with Downgradient Injection Wells	17, 20

Northeast Area Ownership

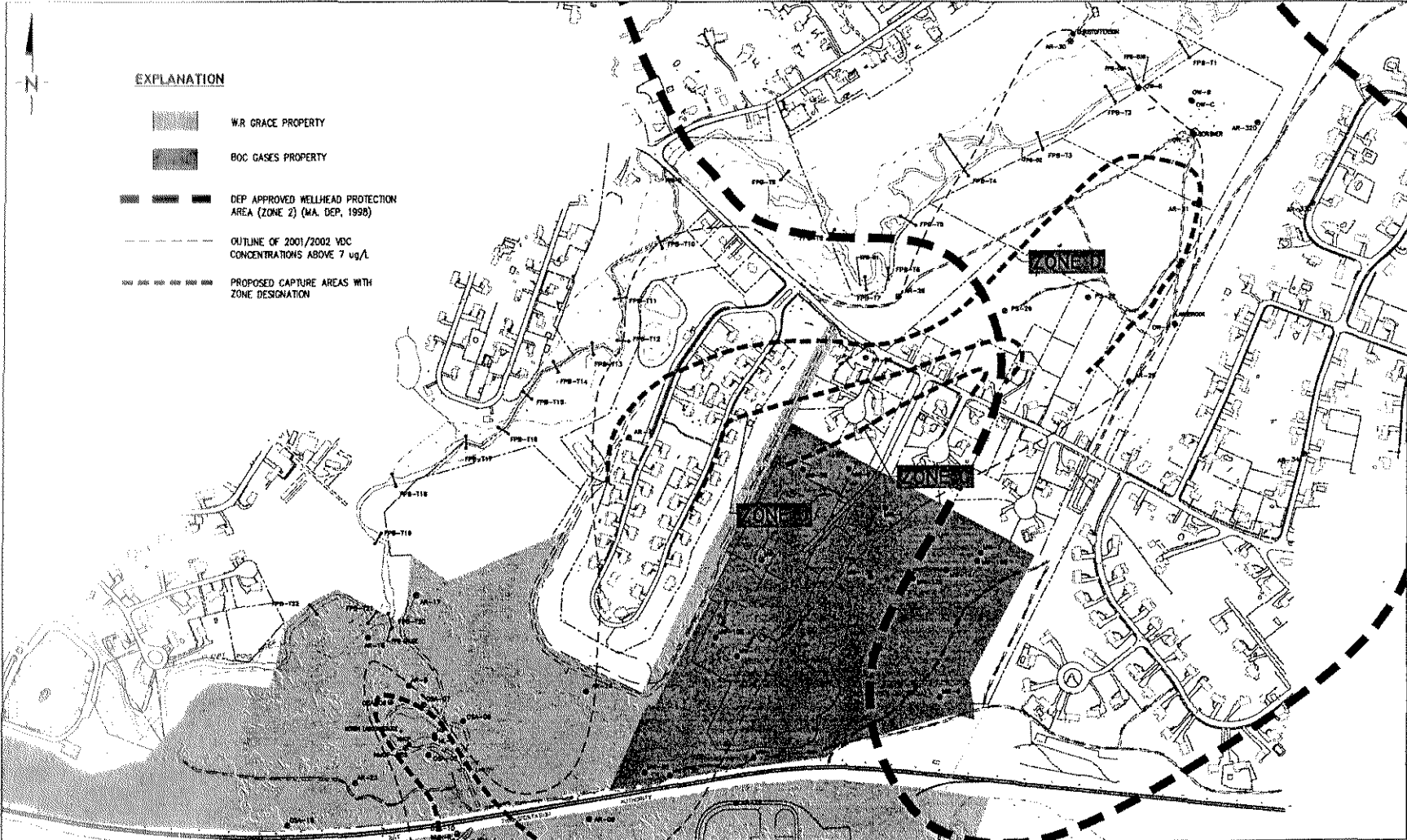
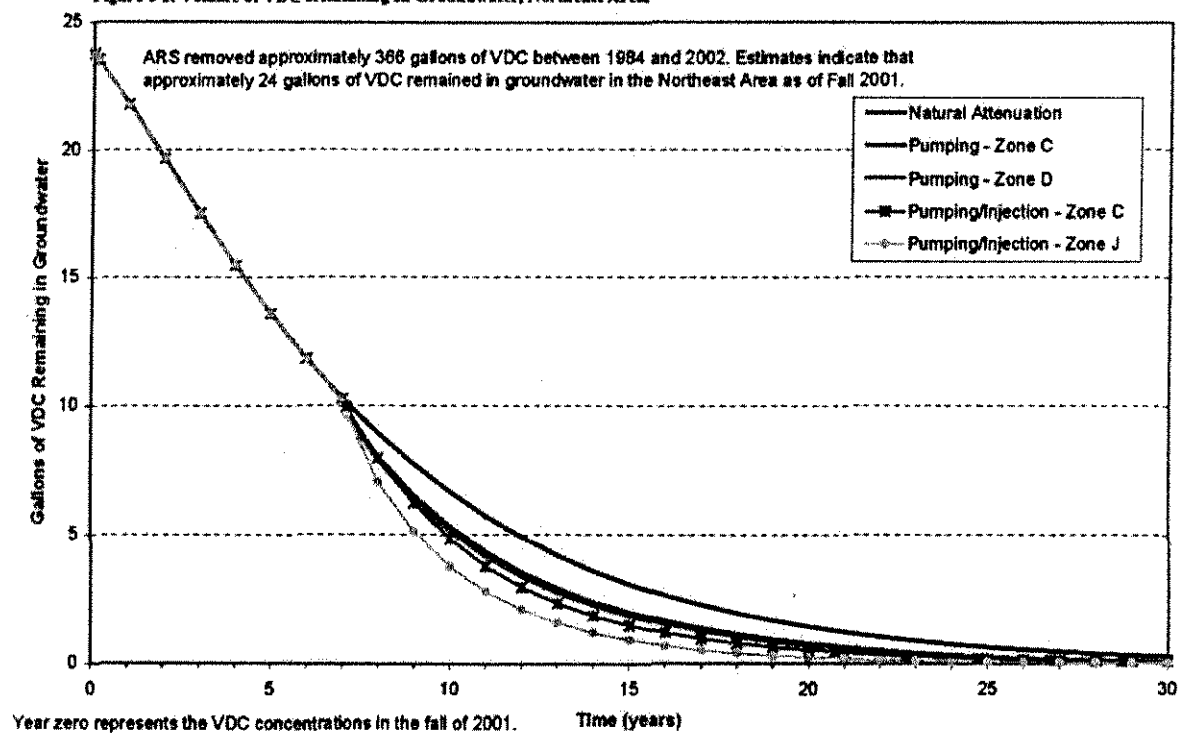


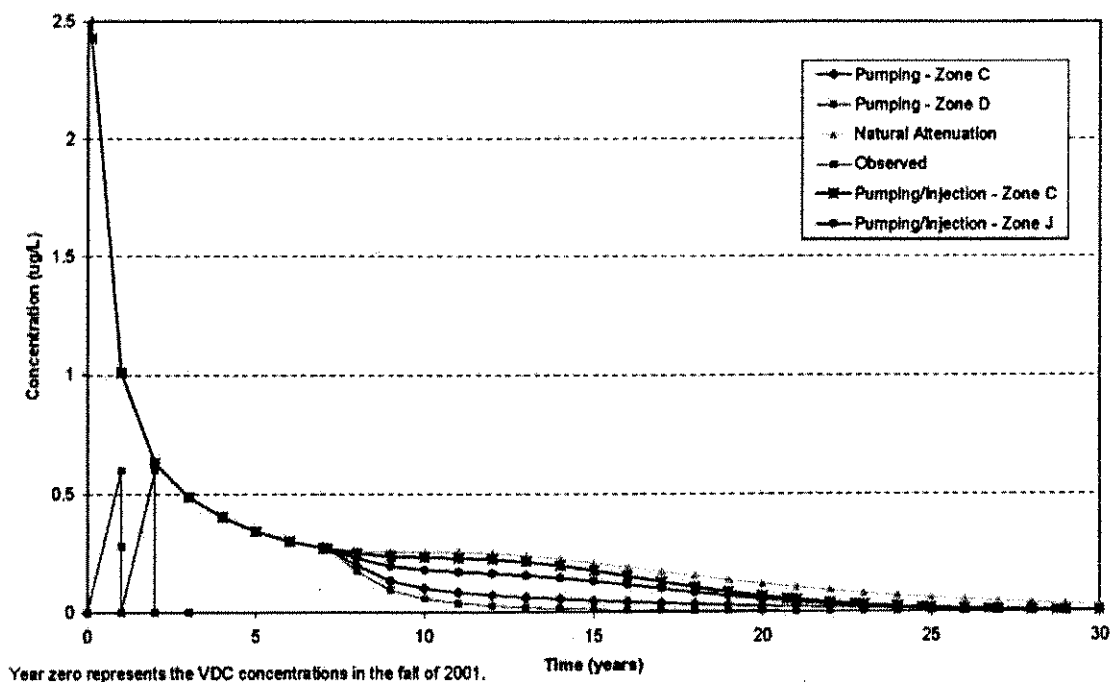
Figure 6-5. Volume of VDC Remaining In Groundwater, Northeast Area.



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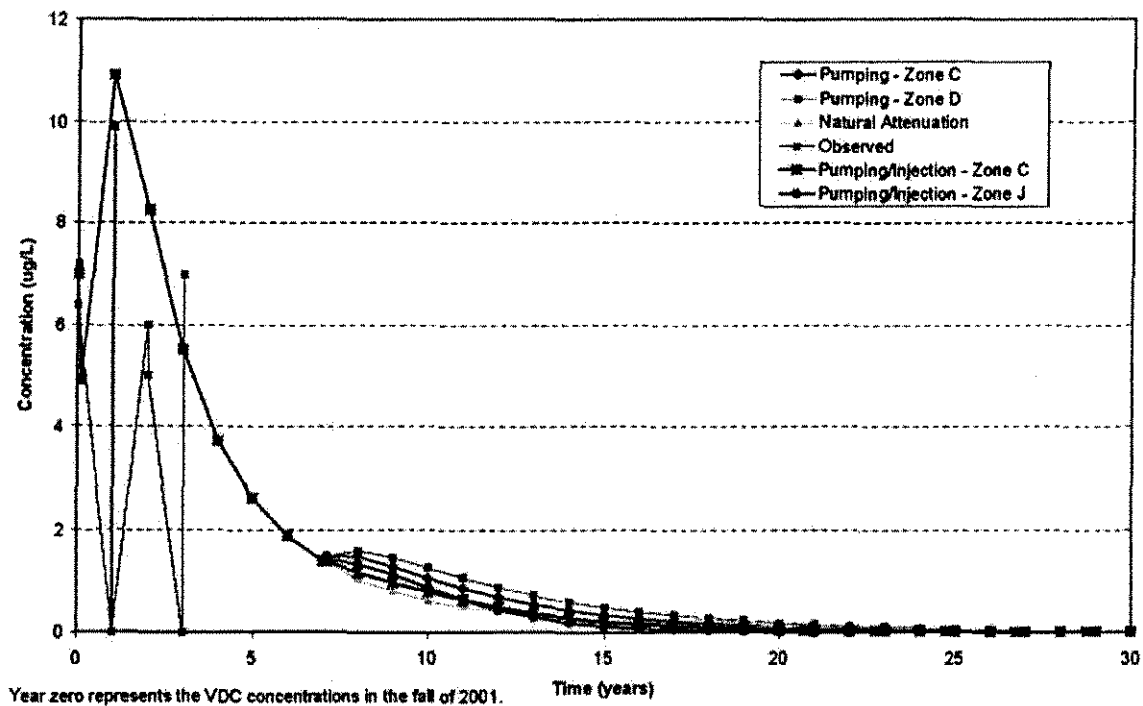
Figure 6-2. VDC Concentrations in Christofferson Well for Remedial Alternatives.



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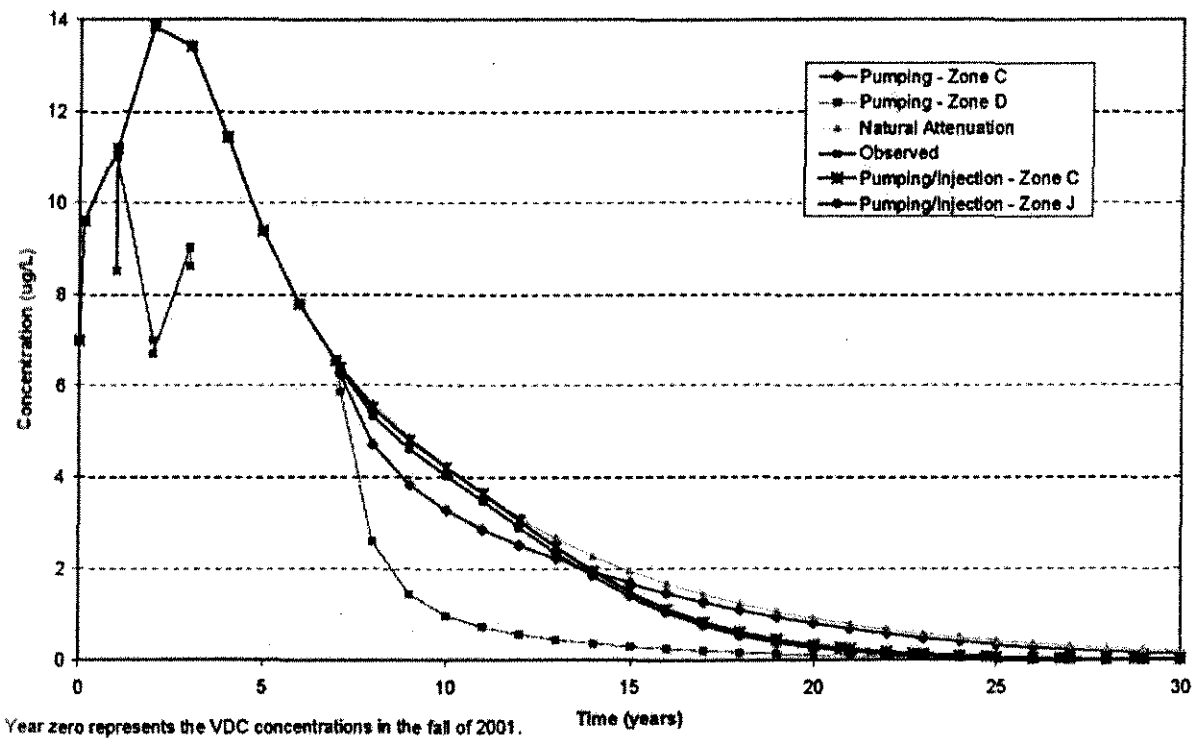
Figure 6-3. VDC Concentrations in the Lawsbrook Well for Remedial Alternatives.



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Figure 6-4. VDC Concentrations in the Scribner Well for Remedial Alternatives.



Alternative GW-3 Components

- Groundwater extraction with ex-situ treatment downgradient of landfill areas
- Monitored natural attenuation of remaining contaminated groundwater
- Institutional controls to prevent exposure to contaminated groundwater

EPA's Proposed Cleanup Plan

- Extraction and treatment of contaminated groundwater in southeast and southwest landfill areas on the Grace property
- Construction of an approximately 200 gallon per minute groundwater treatment plant
- Treatment processes include:
 - Chemical precipitation to remove inorganics
 - Air stripping with off-gas treatment to remove VOCs
 - Treated water to be discharged to Sinking Pond
- Monitored natural attenuation and/or enhanced flushing of areas of groundwater contamination not captured by the extraction system

EPA's Proposed Cleanup Plan

- Cleanup of contaminated sediment and soil posing an unacceptable risk to human health and/or the environment in Sinking Pond and the North Lagoon Wetlands
- Institutional controls (deed restrictions and/or ordinances) to prevent unacceptable exposure to contaminated groundwater until cleanup levels are met and to protect against unacceptable future exposures to any waste left on-site

EPA's Proposed Cleanup Plan

- Long-term monitoring of the groundwater, surface water, and sediment, and periodic five-year reviews of the remedy
- The estimated total cost for this cleanup is \$16.9 million
 - \$11.8 million construction costs
 - \$5.1 million present value of operation, maintenance, and monitoring costs

Public Comment Period

- Public Comment Period ends August 9, 2005
 - Submit comments in writing by fax, email, or letter.
- Public Hearing August 4, 2005
 - Verbal comments will be transcribed
- EPA will respond in writing to comments in a “Responsiveness Summary” to accompany the Record of Decision (ROD) by the end of September 2005

How to Comment

- Submit comments to:

Derrick Golden

EPA - New England, Region 1

1 Congress Street, Suite 1100 HBO
Boston, MA 02114-2023

Email or Fax by midnight 8/9/05 to:

Fax: 617-918-0448 or 617-918-1291

- Provide Verbal Comments at Public Hearing at
Acton Town Hall on August 4, 2005 at 7pm